



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

FD

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/808,064	03/24/2004	David E. Heckerman	MS77398.05/MSFTP357USB	4192
27195	7590	05/18/2007	EXAMINER	
AMIN, TUROCY & CALVIN, LLP			ALAM, SHAHID AL	
24TH FLOOR, NATIONAL CITY CENTER			ART UNIT	PAPER NUMBER
1900 EAST NINTH STREET			2162	
CLEVELAND, OH 44114				
			MAIL DATE	DELIVERY MODE
			05/18/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>
	10/808,064	HECKERMAN ET AL.
	<b>Examiner</b>	<b>Art Unit</b>
	Shahid Al Alam	2162

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 23 February 2007.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 69-88 is/are pending in the application.
- 4a) Of the above claim(s) 84-86 is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 69-83,87 and 88 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 24 March 2004 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413)
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	Paper No(s)/Mail Date. _____
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)	5) <input type="checkbox"/> Notice of Informal Patent Application
Paper No(s)/Mail Date _____	6) <input type="checkbox"/> Other: _____

## DETAILED ACTION

### Response to Election/Restriction Requirements

1. Applicant's election with traverse of Group I (claims 69 – 83 and 87 – 88) in the reply filed on February 23, 2007 is acknowledged.

Applicant elected with traverse but did not argue as to why election was made with traverse.

With reference to "**Related Inventions**", MPEP 808.02 states:

Where, as disclosed in the application, the several inventions claimed are related, and such related inventions are not patentably distinct as claimed, restriction under 35 U.S.C. 121 is never proper (MPEP 806.05). If applicant optionally restricts, double patenting may be held. **Where the related inventions as claimed are shown to be distinct under the criteria of MPEP 806.05(c) - 806.05 (i), the examiner, in order to establish reasons for insisting upon restriction, must show by appropriate explanation one of the following:**

- (A) Separate classification thereof: This shows that each distinct subject has attained recognition in the art as a separate subject for inventive effort, and also a separate field of search. Patents need not be cited to show separate classification.
- (B) A separate status in the art when they are classifiable together: Even though they are classified together, each subject can be shown to have formed a separate subject for inventive effort when an explanation indicates a recognition of separate inventive effort by inventors. Separate status in the art may be shown by citing patents which are evidence of such separate status, and also of a separate field of search.

Art Unit: 2162

(C) A different field of search: Where it is necessary to search for one of the distinct subjects in places where no pertinent art to the other subject exists, a different field of search is shown, even though the two are classified together. The indicated different field of search must in fact be pertinent to the type of subject matter covered by the claims. Patents need not be cited to show different fields of search. Where, however, the classification is the same and the field of search is the same and there is no clear indication of separate future classification and field of search, no reasons exist for dividing among related inventions.

The examiner has fulfilled his duties by providing appropriate explanation as to how the related inventions of Groups I and II are distinct **under the criteria of MPEP: 806.05(c) - 806.05(i)**.

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 69 – 83 and 87 – 88, drawn to a category visualization (CV) system that displays a graphic representation of each category as a hierarchical map, classified in class 707, subclass 101.
- II. Claims 84 – 86, drawn to a category visualization (CV) system that displays a graphic representation of each category as a similarity graph, classified in class 707, subclass 6.

The inventions are distinct, each from the other because of the following reasons:

Inventions as listed in Group I and Group II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct if they do not overlap in scope and are not obvious variants, and if it is shown that at

Art Unit: 2162

least one subcombination is separately usable. In the instant case, subcombination has separate utility such as follow:

Group I teaches a category visualization (CV) system that displays a graphic representation of each category as a hierarchical map. Forming successively higher levels of the hierarchy, while Group II teaches a category visualization (CV) system that displays a graphic representation of each category as a similarity graph. A similarity threshold is discussed.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art in view of their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions require a different field of search (see MPEP § 808.02), restriction for examination purposes as indicated is proper.

Because these inventions are independent or distinct for the reasons given above and there would be a serious burden on the examiner if restriction is not required because the inventions have acquired a separate status in the art due to their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

See MPEP § 806.05(d).

Art Unit: 2162

Besides that requiring an examiner does not seem to be in conformance with two well known Patent Goals outlined in the published Strategic Plan of the U. S. Patent and Trademark Office, available to the general public at [www.uspto.gov](http://www.uspto.gov). **The purpose of these goals is an efficient and streamlined patent process to reduce the cycle time and improve the quality of a patent issued.** The common sense is also that searching in limited and appropriate areas would turn out a prior art reference faster and thus help close the prosecution of a case earlier.

So in view of the above mentioned MPEP sections and in the spirit of fulfilling stated Patent Goals, the examiner respectfully submits that, the requirement is still deemed proper and is therefore made FINAL.

*Oath/Declaration*

2. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because:

It does not identify the mailing address of each inventor. A mailing address is an address at which an inventor customarily receives his or her mail and may be either a home or business address. The mailing address should include the ZIP Code designation. The mailing address may be provided in an application data sheet or a supplemental oath or declaration. See 37 CFR 1.63(c) and 37 CFR 1.76.

Art Unit: 2162

It does not identify the city and either state or foreign country of residence of each inventor. The residence information may be provided on either an application data sheet or supplemental oath or declaration.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 74 and 77 – 81 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 74 and 77 – 81, it is unclear as to how to determine values for these claims, because there are no system module and no steps of function.

***Claim Rejections - 35 USC § 101***

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1 and 87 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

To be statutory, a claimed computer-related process must either: (A) result in a physical transformation outside the computer for which a practical application is either disclosed in the specification or would have been known to a skilled artisan, or (B) be limited to a practical application with useful, concrete and tangible result.

Claims 1 and 87 teaches displaying a graphic representation and body of the claim is displaying of data structure.

As such, the claim is not limited to statutory subject matter and is therefore non-statutory.

**Functional Descriptive Material: “Data Structures” Representing Descriptive Material Per Se**

Data structures not claimed as embodied in computer-readable storage media are descriptive material per se and are not statutory because they are not capable of causing functional change in the computer. See, e.g., Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se held nonstatutory).

Such claimed data structures do not define any structural and functional interrelationships between the data structure and other claimed aspects of the invention which permit the data structure’s functionality to be realized. See MPEP 2106 IV(B)(a).

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 69 – 76, 82 – 83 and 87 – 88 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 90/04231 issued to Sharon Garber et al. (“Garber”).

With respect to claim 69, Garber teaches a category visualization (CV) system that displays a graphic representation of each category as a hierarchical map, comprising:

a node corresponding to each base category; nodes corresponding to combinations of similar categories; a leaf node corresponding to a base category, the leaf node is positioned as a cluster of nodes at a lowest level of the hierarchy wherein combinations of similar categories are positioned on top of the leaf node, forming successively higher levels of the hierarchy; a root node corresponding to a category that contains all records in a collection, the root node forms top of the hierarchy; a non-leaf node corresponding to each combined category, wherein similar base categories are combined into a combined category; and wherein each non-leaf node has two arcs that connect the non-leaf node to two nodes corresponding to sub-categories of the combined category (Page 31, lines 11 – 32, pages 95 – 97, claims 1 – 5 and Figure 19).

As to claim 70, the base category is a category identified by a categorization process (classification and clustering: page 17, lines 7 – 16).

As to claim 71, the combined category is assigned the records of two or more base categories (pages 96 – 97, claims 4 and 5).

As to claim 72, if a node is selected, the system displays additional information about corresponding category, such as number of records in the category or characteristic attributes of the category (page 17, lines 17 – 33).

As to claim 73, the additional information further comprises characteristic and discriminating information such as attribute-value discrimination, attribute-value

discrimination refers to how well the value of an attribute distinguishes the records of one category from the records of another category (page 19, lines 1 – 21).

As to claim 74, attribute-value discrimination is determined by the equation (page 16, lines 17 – 25 and page 79, lines 25 – 36).

As to claim 75, if an arc is selected, the system displays information relating to categories connected by the arc, such as similarity value for the connected categories (page 18, lines 3 – 11).

As to claim 76, similarity value refers to a rating of the differences between attribute values of records in one category and attribute values of records in another category, a high value for similarity indicates that there is little difference between the records in the two categories (page 47, line 35 – page 48, line 35).

As to claim 82, the graphic representation of each category is displayed as a decision tree, further comprising: nodes that correspond to each attribute of the corresponding base categories; and arcs that correspond to values of that attribute; wherein each node, except the root node, represents a setting of attribute values as indicated by arcs in a path from a first node to the root node (page 17, lines 17 – 33 and Figure 19).

As to claim 83, the selection of a node, results in display of a probability for each category that a record in the category will have attribute settings that are represented by the path (page 17, lines 17 – 33).

The subject matter of claims 87 and 88 are rejected in the analysis above and these claims are rejected on that basis.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 77 - 81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Garber as applied to claims above, and further in view of U.S. Patent Number 4,903,305 issued to Laurence Gillick et al. ("Gillick").

With respect to claims 77 – 81, Garber teaches the invention substantially as claimed. However, Garber does not explicitly teach the distance and similarity between two categories as claimed.

Art Unit: 2162

Gillick teaches claimed distance and similarity between two categories (distance between the node and the cluster is calculated using a distance metric, . . . , column 14, lines 45 – 60). The distance metric is based on a Kullback-Leibler distance (column 15, lines 7 – 30).

Therefore, it would have been obvious to a person of ordinary skill in the art at the time of the invention was made to modify the teachings of Garber with the teachings of Gillick to provide a method which is capable of accurately finding similar acoustic units occurring in different words, so as to enable a common acoustic model for such similar acoustic units to be made (column 3, lines 41 – 45).

***Contact Information***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shahid Al Alam whose telephone number is (571) 272-4030. The examiner can normally be reached on Monday-Thursday 8:00 A.M.- 4:00 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John E. Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Shahid Al Alam  
Primary Examiner  
Art Unit 2162

May 11, 2007